

## REMARKS

In view of the above amendment and the following remarks, Applicant requests reconsideration of this application.

Claims 1-38 were originally filed in the application. Claims 9-11, 23 and 28-30 have been canceled without prejudice. Claims 40-45 have been added. Thus, claims 1-8, 12-22, 24-27 and 31-45 are presently pending.

### Response to Claim Rejections - 35 U.S.C. § 112

Claims 23 and 24 stand rejected under 35 U.S.C. § 112 as being indefinite. Claim 23 has been canceled without prejudice. Claim 24 has been amended to depend from claim 20, rather than claim 23.

### Response to Claim Rejections - 35 U.S.C. § 102

Claims 1, 2, 7 and 12-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Yoder. Applicants respectfully traverse this rejection.

Yoder discloses a heterojunction bipolar transistor structure 30 (see FIG. 2a) having an n-type SiC substrate (emitter) 32, a p-type SiCAIN base region 34 overlying the substrate and an n-type SiCAIN 36 overlying the base region (col. 7, lines 45-60). Yoder does not teach or suggest having the SiCAIN layer as a buffer layer between the substrate and an active region. Nor does Yoder teach or suggest a structure having a SiCAIN layer formed on a Si substrate. Nor does Yoder teach or suggest a structure wherein the active region is a gallium nitride region.

Applicants have amended claim 1, which is directed to a semiconductor structure including a substrate, a SiCAIN buffer layer formed over the substrate, and an active region formed over the SiCAIN buffer layer. Because Yoder does not teach or suggest a structure having these elements, Applicants submit that claim 1 is patentable over Yoder.

Claim 2 has been amended to expressly incorporate the limitations of original claim 1, which were already present in claim 2 by virtue of the fact that it depended from original claim 1. This amendment, therefore, is not a narrowing amendment. Claim 2 is directed to a

semiconductor structure having a substrate; a SiCAIN region formed over the substrate, and an active region formed over the SiCAIN region, wherein the active region comprises a gallium nitride region. Because Yoder does not teach or suggest a structure wherein the active region is a gallium nitride region, Applicants respectfully submit that claim 2 is patentable over Yoder.

Each of claims 7 and 12-18 depends from and includes all of the limitations of claim 1. For the reasons set forth above, therefore, Applicants respectfully submit that claims 7 and 12-18 also are patentable over Yoder.

Claims 20, 31-33 and 38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Matsubaguchi, et al. Applicants respectfully traverse this rejection.

Matsubaguchi discloses an optomagnetic recording medium comprising a substrate 6 a recording layer 2 and SiAlON dielectric protective layers 1, 3. Matsubaguchi does not teach or suggest a structure having a SiCAIN region formed over the SiAlON layer.

Applicants have amended claim 20, which is directed to a semiconductor structure having a substrate, a crystalline oxide region formed over the substrate, a SiCAIN region formed over the crystalline oxide region and an active region formed over the crystalline oxide region. Because Matsubaguchi does not teach or suggest a structure having these elements, Applicants respectfully submit that claim 20 is patentable over Matsubaguchi.

Each of claims 31-33 and 38 depends from and includes all of the limitations of claim 20. For the reasons set forth above, therefore, Applicants respectfully submit that claims 31-33 and 38 also are patentable over Matsubaguchi.

#### Response to Claim Objections

Claims 3-6, 8-11, 19, 21, 22, 25-30 and 34-37 have been objected to by the Examiner.

Claim 3 depends from and includes all of the limitations of claim 2. For the reasons set forth above with respect to claim 2, therefore, Applicants respectfully submit that claim 3 also is patentable over Yoder.

Each of claims 4-6, 8 and 19 depends from and includes all of the limitations of claim 1. Applicants respectfully submit, therefore, that claims 4-6, 8 and 19 are patentable.

Claims 9-11 have been canceled without prejudice.

Each of claims 21, 22, 25-27 and 34-37 depends from and includes all of the limitations of claim 20. Applicants respectfully submit, therefore, that claims 21, 22, 25-27 and 34-37 are patentable.

Claims 23 and 28-30 have been canceled without prejudice.

#### Added Claims

Claims 39-45 have been added to more completely claim the invention.

Claim 39 is directed to a semiconductor structure comprising a Si substrate, a SiCAlN region formed over the substrate, and an active region formed over the SiCAlN region. Nothing in the art of record teaches or suggests such a structure. Applicants submit, therefore, that claim 39 is patentable. Claims 40-45 depend from and include all of the limitations of claim 39 and are likewise patentable.

#### Conclusion


For the foregoing reasons, Applicants submit that the pending claims are in allowable form. Applicant therefore requests reconsideration and allowance of these claims.

Response and Amendment  
US Patent Application No. 10/663/168

The Examiner is invited to telephone the Applicant's undersigned attorney at (602) 255-6094 if this would in any way facilitate prosecution of the application.

Dated: February 23, 2005

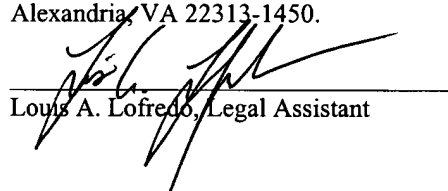
Respectfully submitted,



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Louis A. Lofredo, Legal Assistant

2/23/05  
Date of Signature